

JOB HAZARD ANALYSIS

Hazard Types (HT)

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|--------------------------------------|--------------------------------|
| 1. Toxic Chemicals | 15. Fall (Slips/Trips) |
| 2. Flammable Chemicals | 16 Fall (To a Different Level) |
| 3. Corrosive Chemicals | 17. Excavation (Collapse) |
| 4. Environmental | 18. Fire, Heat, Thermal, Cold |
| 5. Explosion (Chemical Reaction) | 19. Noise |
| 6. Explosion (Over pressurization) | 20. Radiation |
| 7. Mechanical/Vibration | (Ionizing/Non-Ionizing) |
| 8. Electrical (Shock, Short Circuit) | 21. Visibility |
| 9. Electrical (Fire) | 22. Weather |
| 10. Electrical (Static, ESD) | 23. Caught (In, On, Between) |
| 11. Electrical (Loss of Power) | 24. Struck (By, Against) |
| 12. Ergonomic (Overexertion) | 25. Driving |
| 13. Ergonomic (Human Error) | 26. Confined Space |
| 14. Vibration | 27. Other |

Job Task: Water Emergency Response Team – Unknown Contaminant Response

Tools Used:

Flashlight, Digital Camera, Binoculars, Mirror, GPS Unit, Pressure Gauge, Clipboard, Laptop, Cell Phone/Communication Device, First Aid Kit, Colorimeter

Chemicals Used: HACH Chlorine Kit to measure low level chlorine residual in drinking water

Required Health & Safety Training: 1) 24hr HAZWOPER; 2) 8hr HAZWOPER Annual Refresher; 3) Defensive Driving Training; 4) Confined Space Awareness Training; 5) First Aid & CPR

Recommended Health & Safety Training: HAZCOM (HAZard COMmunication/chemical compatibility training specific to drinking water & wastewater operations

Medical Surveillance Required? No

CRITICAL TO SAFETY (CTS) Risk Estimation Matrix

Probability of Occurrence of Harm	SEVERITY OF HARM			
	Catastrophic	Serious	Moderate	Minor
VERY LIKELY	Extreme	High	High	Medium
LIKELY	High	High	Medium	Low
UNLIKELY	Medium	Medium	Low	Negligible
REMOTE	Low	Low	Negligible	Negligible

Job Description: This job hazard analysis refers to the work drinking water/wastewater teams are anticipated to perform during a response to an unknown contaminant event. This applies primarily to EPA personnel providing technical assistance to On-Scene Coordinators (OSCs) or their contractor who will be conducting on-site evaluations at drinking water and wastewater facilities. Work for the water/wastewater teams may include being in the field in a safe zone providing technical input on how to evaluate and sample drinking water and wastewater systems. Personnel may be asked to provide technical direction on how to evaluate the operational status of plants, sample finished water for a variety of constituents (depending upon leaks, releases, spills, total coliform/*E. coli*, etc), and/or monitor water tanker trucks for potability.

Step #	Procedures (LOP Procedure Step)	Potential Hazards	HT	Check CTS	Recommended Safe Practice	PPE
1	Notification of Activation	None	NA	NA	NA	NA
2	Organize personnel/equipment/supplies; Deploy to base station	Lifting, twisting, low back strain, motor vehicle crash, weather, driving in unfamiliar areas and conditions, driver fatigue	13, 21, 22, 24, 25	Medium	Careful lifting techniques; secure grip; packing at desk level or higher; team lift for heavy objects; drive defensively; do not use hand-held devices or text while driving; ensure adequate sleep (7-8 hrs); take frequent breaks; keep updated maps & routes; keep cell phone charged and readily available for emergency communications or situational updates.	None

Step #	Procedures (LOP Procedure Step)	Potential Hazards	HT	Check CTS	Recommended Safe Practice	PPE
3	Attend situation awareness/safety briefing; obtain information on system(s) to visit; deploy to facility location(s)	Motor vehicle crash, weather, driving in unfamiliar areas and conditions, driver fatigue	13, 21, 22, 24, 25	Medium	Defensive driving; do not use hand-held devices or text while driving; ensure adequate sleep (7-8 hrs); take frequent breaks; keep updated maps & routes; keep cell phone charged and readily available for emergency communications or situational updates.	None
4	Provide technical direction for field activities from base station or other safe location	Environmental, stress, ergonomics, slips/trips/falls, heat/cold stress, weather, noise	4, 12, 13, 15, 18, 19, 22	Low	REFERENCE HAZARD ASSESSMENT FORM AND REQUIRED PERSONAL PROTECTIVE EQUIPMENT	
5	Drive to next location (if necessary) and repeat step 4 above	Motor vehicle crash, weather, driving in unfamiliar areas and conditions, driver fatigue	13, 21, 22, 24, 25	Medium	Defensive driving; do not use hand-held devices or text while driving; take frequent breaks; keep updated maps & routes; keep cell phone charged and readily available for emergency communications or situational updates.	None
6	At completion of day, return to base station	Motor vehicle crash, weather, driving in unfamiliar areas and conditions, driver fatigue	13, 21, 22, 24, 25	Medium	Defensive driving; do not use hand-held devices or text while driving; take frequent breaks; keep updated maps & routes; keep cell phone charged and readily available for emergency communications or situational updates.	None

Required Personal Protective Equipment

Where engineering and administrative controls are not feasible or sufficient for controlling hazards, PPE must be used to protect workers. The following PPE is required for the noted tasks: Step #4 above (provide technical direction for field activities from a base station or other safe location)

Eye and Face Protection

	Safety glasses with side shields		Reflective goggles/face shield
	Chemical splash goggles		Cutting/brazing/welding eye protection
	Face shield	X	Other: Sunglasses

Head Protection

	Hard hat, bump cap		Helmet, cowl, hood
	Welding helmet/mask		Other:

Foot Protection

X	Steel-toed boots		Other:
	Chemical-resistant boots		

Body Protection

	Apron (splash, work)		Head-reflective garments
	Lab coat		Sleeves (cut-resistant)
	Coveralls (work, chemical-resistant) Hazard Type: Type overall:	X	Other: Appropriate field gear for the weather (heat/cold stress, wet weather)

Respiratory Protection

	Respirator (situation dependent)		Type of respirator:
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Hand Protection

	Rubber insulating gloves		Rubber insulating sleeves
	Rubber insulating hoods		Other: Leather Work Gloves & Chemical Resistant Gloves (type is dependant upon potential exposure)

Other:

Ear plugs and/or muffs
Reflective safety vest
Insect repellent
Sunscreen

PPE Hazard Assessment Form		
HEALTH AND SAFETY HAZARDS		
Chemical Hazards		Description/Mitigation
	Vapors/gases	NA – Technical assistance only
	Dusts/mists/fumes	NA
	Liquid splash	NA
Physical Hazards		Description/Mitigation
X	Penetration/punctures/cuts/lacerations/compressions	Though personnel will conduct technical assistance only, the activity can occur in various environmental settings (base station or mobile command post). Hazards should be minimal, however there is the potential for heavy equipment to be moved and stored in the surrounding area and can present a compression hazard. Personnel should wear reflective safety vests to ensure enhanced visibility. Since the mobile command post can be located in various types of terrain, penetrations/punctures/cuts/lacerations are possible. Personnel utilize steel-toed safety boots to reduce exposure.
X	Heat—high temperatures	Unknown contamination can occur anytime of the year and during all types of weather conditions, which could include extreme heat. Heat stress is a viable hazard; therefore personnel must ensure adequate hydration and appropriate field gear (light weight, loose fitting and light-colored clothing) is worn while engaging in emergency response activities. Personnel should be trained on the signs and symptoms of heat stress, heat stroke, and heat exhaustion and understand corrective measures to take.
X	Cold—cold temperatures	Unknown contamination can occur anytime of the year and during all types of weather conditions, which could include extreme cold. Cold stress is a viable hazard; therefore personnel must ensure adequate hydration and appropriate field gear (layers, protecting the extremities especially fingers, toes, nose, and ears) is worn while engaging in emergency response activities. Personnel should be trained on the signs and symptoms of frost bite and hypothermia and understand corrective measures to take.
	Electrical shock	NA
	Fire/explosion	NA
X	Noise	Employees are potentially exposed to hazardous noise due to a variety of sources during emergency response activities. Personnel may work around/near heavy equipment in use or stored near base station or mobile command post (e.g. backhoes, dump trucks, etc.) Personnel must wear ear plugs and/or muffs while around hazardous noise sources. Noise levels have not been documented. Further analysis is required.
	Confined spaces	NA
X	Slips/trips/falls	Though personnel will conduct technical assistance only, the activity can occur in various environmental settings (base station or mobile command post). Hazards should be minimal, however since the mobile command post can be located in various types of terrain, slips/trips/falls are possible. Personnel need to be cognizant of their surroundings and utilize steel-toed safety boots to reduce exposure.
X	Driving	Vehicular accidents and traffic are potential hazards encountered while driving to and from base station. Defensive driving training is required (every 3yrs). Do not use hand-held devices or text while driving. Personnel must keep updated maps and routes. Keep cell phone charged and readily available for emergency communications or situational updates.
X	Other	Fatigue is also a concern due to potentially long working hours (12-16 hours/day). Personnel must limit work shifts to a maximum of 16 hours including travel time to and from base station. Ensure adequate sleep of at least 7-8 hrs and take frequent breaks. Personnel should check weather forecasts prior to deployment and prepare for conditions prior to leaving for the site.
Biological Hazards		Description/Mitigation
	Bloodborne pathogens	NA
X	Animals	Employees may encounter a variety of animals and insects while in the field. These include aggressive dogs (domestic and/or feral), other feral animals, snakes, mosquitos, spiders, bees, wasps, etc. Personnel are not to engage animals no matter how friendly they seem. Personnel should wear appropriate field gear depending upon the location (e.g. long sleeves, long pants, insect repellent, etc). Personnel need to be cognizant of their surroundings and take evasive actions to avoid contact with animals/insects.

Completed by: Water Team H&S Group

Date: 03/22/2012

SHEMP Review: _____

Date: _____